

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number
WO 2005/050629 A3

(51) International Patent Classification⁷: **G11B 7/09**

(21) International Application Number:
PCT/EP2004/011686

(22) International Filing Date: 16 October 2004 (16.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03024813.2 30 October 2003 (30.10.2003) EP
03025972.5 13 November 2003 (13.11.2003) EP

(71) Applicant (for all designated States except US): **THOMSON LICENSING S.A.** [FR/FR]; 46 Quai A. Le Gallo, F-92100 Boulogne-Billancourt (FR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LO MUZIO**, Pierluigi [IT/DE]; Pforzheimer Str. 37, 78048 Villingen-Schwenningen (DE). **KABUTZ**, Marten [ZA/DE]; Tirolerstr. 23, 78052 Villingen-Schwenningen (DE). **SCHEMMANN**, Heinrich [DE/DE]; Danziger Str. 17, 78052 Villingen-Schwenningen (DE).

(74) Agent: **THIES**, Stephan; Deutsche Thomson-Brandt GmbH, European Patent Operations, Karl-Wiechert-Allee 74, 30625 Hannover (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

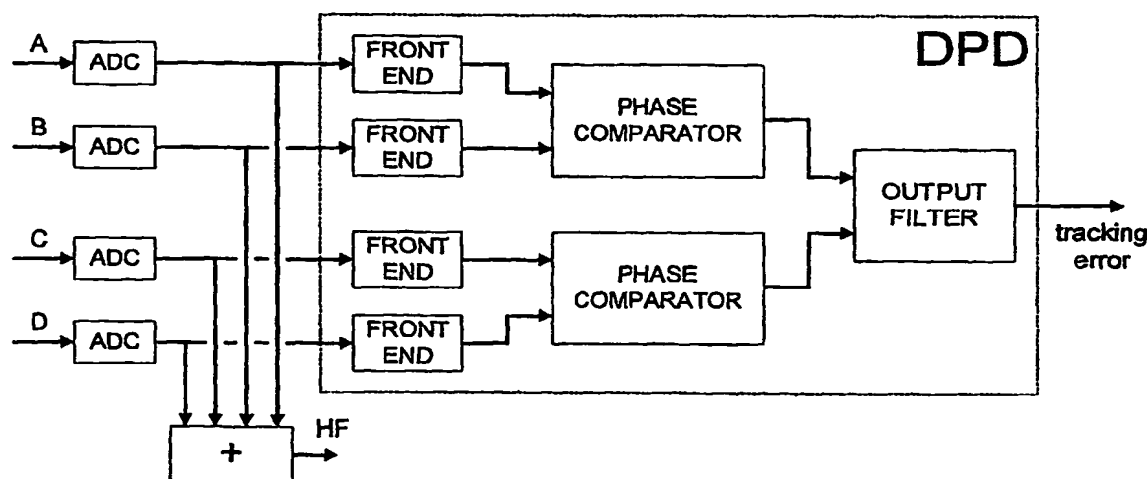
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
21 July 2005

[Continued on next page]

(54) Title: DIFFERENTIAL PHASE DETECTOR



(57) Abstract: The present invention relates to a full-digital implementation of a differential phase detector and to an interpolator for such a differential phase detector. According to the invention a differential phase detector for generating a tracking error signal from the digitized signals (A, B, C, D) of four photodetectors, having a multiplexer for time multiplexing the digitized signals (A, B, C, D), includes a demultiplexer / interpolator for synchronizing the samples from the time multiplexed digitized signals (A, B, C, D). The demultiplexer / interpolator favorably receives a four signal time multiplex and generates four channels at half the speed of the time multiplex.



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.